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AMERICAN NATIONAL STANDARD

Guide to the Evaluation of Human Exposure to Vibration in Buildings

ANSI/ASA S2.71-1983
(Formerly ANSI S3.29-1983)

Accredited Standards Committee S2, Mechanical Vibration and Shock

Standards Secretariat
Acoustical Society of America
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The Acoustical Society of America (ASA) is an organization of scientists and engineers formed in 1929 to increase and diffuse the knowledge of acoustics and to promote its practical applications.



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Approved by American National Standards Institute, Inc.

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ABSTRACT

Reactions of humans to vibrations of 1 to 80 Hz inside buildings are assessed in this Standard by use of degrees of perception and associated vibration levels and durations. Accelerations or velocities inside buildings may be measured to assess perceptibility and possible adverse reactions from those inside. A variety of building types and situations are covered by the use of multiplying factors applied to the basic curves. Responses are related to the event durations, frequencies of vibration, and body orientation with respect to the vibration. Adherence to the vibration magnitudes corresponding to the perceptibility threshold will insure minimum discomfort and annoyance. The "acceptability" of a given magnitude of vibration above the perception threshold will be influenced by the interference of the vibrations in the activities of individuals and by the various social, economic, and legal relationships between the source of the vibrations and the receivers. Other related factors are the degree of startle, fear of injury or structural damage, and attitudes about the source including its inevitability, duration, and necessity.

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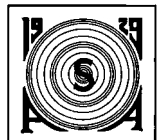
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Bibliography

Foreword

[*This Foreword is not a part of ANSI S2.71-1983 (R 2006) American National Standard Guide to the Evaluation of Human Exposure to Vibration in Buildings (formerly ANSI S3.29-1983).*]

This American National Standard Guide to the Evaluation of Human Exposure to Vibration in Buildings was developed under the American National Standard Committee method of procedure under the secretariat of the Acoustical Society of America.

This American National Standard was developed and approved in 1983 by the Accredited Standards Committee on Bioacoustics S3, which had the following scope at that time:

Standards, specifications, methods of measurement and test, and terminology in the fields of psychological and physiological acoustics, including aspects of general acoustics, shock and vibration which pertain to biological safety, tolerance, and comfort.

In 2004, work related to human exposure to mechanical vibration and shock was transferred to Accredited Standards Committee S2, Mechanical Vibration and Shock. Five approved S3 standards were transferred to S2 at that time and will be redesignated and republished as they each come up for reaffirmation in the normal standards cycle. This redesignation of ANSI S3.29-1983 (R2001) is taking place under this process.

No substantive changes have been made to the approved 1983 text with the exception of correcting errors in Table 1 that were identified in an erratum published in 1998. The current document has also been reformatted to conform to the Sixth Edition of the ASA Committee on Standards Editorial (ASACOS) *Rules for Preparation of American National Standards in Acoustics, Mechanical Vibration and Shock, Bioacoustics, and Noise* (2003), including substitution of the term Annex for the term Appendix throughout.

At the time this standard was submitted to Standards Committee S3 for approval, the membership was as follows:

W. A. Yost, *Chairman*

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